

We Claim:

1. A data transmission system, comprising:

a base station;

at least one mobile station, data packets can be transmitted by radio using a time slot method between said base station and said mobile station;

first means for transmitting a first part of a data packet at a predetermined first symbol rate and at a first transmission frequency; and

second means for transmitting a second part of the data packet at a second symbol rate and at a second transmission frequency.

2. The data transmission system according to claim 1, wherein the first part of the data packet contains information about the second symbol rate.

3. The data transmission system according to claim 1, further comprising third means for producing a guard time interval between the first part and the second part of the data packet.

4. The data transmission system according to claim 1, wherein the second symbol rate is higher than the predetermined first symbol rate.

5. The data transmission system according to claim 1, wherein said base station and said mobile station each have a local oscillator.

6. The data transmission system according to claim 1, wherein each said local oscillator is in each case connected to a phase locked loop.

7. The data transmission system according to claim 1, wherein said base station and said mobile station each have a filter for reception-end selection of a transmission frequency.

8. The data transmission system according to claim 1, wherein said first means has means for producing identification information for identification of an association between said base station and said mobile station.

9. The data transmission system according to claim 1, wherein said first means has means for producing a first data packet head.

10. The data transmission system according to claim 1, wherein said second means has means for producing a synchronization word for synchronization of said base station to said mobile station at the second symbol rate.

11. The data transmission system according to claim 1, wherein the second means has means for producing a second data packet head, and means for transmitting payload data.

12. The data transmission system according to claim 1, wherein:

said base station and said mobile station each have an algorithm for calculating a sequence of first transmission frequencies; and

said base station and said mobile station each have an algorithm for calculating the second transmission frequency.

13. The data transmission system according to claim 1, wherein the data transmission system can be used in digital cordless communications systems, in computer-controlled entertainment systems, computer-controlled games systems, or in systems with real-time requirements.

14. The data transmission system according to claim 1, wherein the first part of the data packet contains information about the second transmission frequency.

15. A method for radio transmission of data packets between a base station and at least one mobile station, which comprises the steps of:

transmitting a first part of a data packet at a predetermined first symbol rate and at a first transmission frequency; and

transmitting a second part of the data packet at a second symbol rate and at a second transmission frequency.

16. The method according to claim 15, which further comprises transmitting information about the second symbol rate with the first part of the data packet.

17. The method according to claim 15, which further comprises complying with a guard time interval before transmitting the second part of the data packet.

18. The method according to claim 15, which further comprises setting the second symbol rate to be higher than the first symbol rate.

19. The method according to claim 15, which further comprises transmitting and/or receiving the data packet using a local oscillator provided in each of the base station and the mobile station.

20. The method according to claim 19, which further comprises connecting the local oscillator in each case to a phase locked loop.

21. The method according to claim 15, which further comprises filtering the transmission frequency, upon receiving the data packet, in the base station and the mobile station.

22. The method according to claim 15, which further comprises transmitting in the first part of the data packet identification information for identifying an association between the base station and the mobile station.

23. The method according to claim 15, which further comprises transmitting a first data packet header in the first part of the data packet.

24. The method according to claim 15, which further comprises transferring a synchronization word, for synchronization of the base station to the at least one mobile station, to the

second symbol rate at a start of the second part of the data packet.

25. The method according to claim 15, which further comprises transmitting a second data packet header and payload data in the second part of the data packet.

26. The method according to claim 15, which further comprises providing the base station and the at least one mobile station respectively access to an algorithm for calculating a sequence of first transmission frequencies, and to an algorithm for calculating second transmission frequencies.

27. The method according to claim 15, which further comprises forming the base station and the mobile station as a digital cordless communications system.

28. The method according to claim 15, which further comprises forming the base station and the mobile station as a computer-controlled entertainment system.

29. The method according to claim 15, which further comprises forming the base station and the mobile station as a computer-controlled game system.

30. The method according to claim 15, which further comprises forming the base station and the mobile station as a system with real-time requirements.

31. The method according to claim 15, which further comprises transmitting information about the second transmission frequency with the first part of the data packet.

32. A data transmission system, comprising:

a base station; and

at least one mobile station, data packets can be transmitted by radio using a time slot method between said base station and said mobile station;

said base station and said mobile station programmed to transmit a first part of a data packet at a predetermined first symbol rate and at a first transmission frequency;

second base station and said mobile station programmed to transmit a second part of the data packet at a second symbol rate and at a second transmission frequency.

33. The data transmission system according to claim 32, said base station and said mobile station further programmed to

produce a guard time interval between the first part and the second part of the data packet.